



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,665	01/18/2002	Kit L. Harper	100110462-1	5357

7590

03/31/2003

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

HSIEH, SHIH WEN

ART UNIT	PAPER NUMBER
----------	--------------

2861

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,665

Applicant(s)

HARPER, KIT L.

Examiner

Shih-wen Hsieh

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being obvious over Michael (US Pat. No. 5,956,053, from IDS).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome

Art Unit: 2861

by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2). Both the reference (US pat. 5,956,053) and the instant application deal with a capping device with special feature such as a reservoir recited in the instant application, which is equivalent to a catch basin in the reference (US pat. 5,956,053).

In regard to:

Claim 1:

Michael teaches:

An apparatus for use with a print head, comprising:

a cap (100, figs. 4-6) configured to define a first opening (144, figs. 4-6) and to have a sealing member (130 and 132, figs. 4-6) that abuts the printhead (70-76, fig. 2);

Art Unit: 2861

a vent (144, figs. 4-6) coupled to the first opening; and
a reservoir (150 and 152, figs. 4-6) coupled to the cap via the vent, refer to col. 11, line 35+.

The device of Michael DIFFERS from claim 1 in that it does not teach:
the reservoir is configured to be isolated from ambient as the sealing member abuts the printhead.

First, per figs. 4-6, there is no opening in the body of the catch basin (150), therefore, it can be concludes that the catch basin or the reservoir named in the instant application is isolated from ambient as the sealing member abuts the printhead.

Second, per col. 15, lines 31-35, the catch basin is used to handle spilled ink and moisture accumulation so as to maintain a humidified environment when the print head is sealed.

Based on the above, therefore it would have been obvious to a person having ordinary skill in the art to understand that although Michael's invention does not explicitly teach the catch basin can be isolated from ambient as the sealing member abuts the print head, the structure of the catch basin based on the above two points can also achieve the isolation purpose.

Claim 2:

Michael further teaches:

wherein the reservoir is configured to retain vapor from the print head, refer to col. 15, lines 31-35.

Claim 3:

Art Unit: 2861

Michael further teaches:

wherein the vent is configured to have a length and a cross-sectional area, and further wherein the length of the vent is greater than the cross-sectional area of the vent, refer to fig. 4 or fig. 5 for the cross-sectional area and length of the vent.

Claim 4:

Michael further teaches:

a humectant in the reservoir (158, fig. 4).

Claim 5:

Michael further teaches:

wherein the reservoir has a fixed volume, refer to fig. 4 or fig. 5.

Claim 6:

Michael further teaches:

the apparatus of Claim 1, in a printing device, refer to the title.

Claim 7:

Michael further teaches:

An apparatus for capping a print head, comprising:

a diffusion path (144, figs. 4 and 5),

a first cavity (125, figs. 4 and 5) having a first opening (upper end of 144) coupled to the diffusion path; and

a second cavity (150, figs. 4-6) having a second opening (lower end of 144) coupled to the diffusion path and configured to communicate with the first cavity via the diffusion path;

Art Unit: 2861

wherein the diffusion path, first cavity, and second cavity are scaled from ambient during capping of the printhead.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above, with the reservoir in claim 1 change to the second cavity in this claim.

Claim 8:

The apparatus of Claim 7, wherein the second cavity is configured to store vapor from the print head.

Rejection:

This claim is the same as those in claim 2 and is rejected on the basis as set forth for claim 2 discussed above.

Claim 9:

The device of Michael DIFFERS from claim 9 in that it does not teach:

wherein the diffusion path is sized to help minimize loss of vapor from the second cavity when the print head is uncapped.

Michael teaches the vent throat (144). Michael does not further specify its size such that the physical dimension of the vent throat in that particular size is able to achieve a certain specific purpose. However, as long as Michael invents the vent throat, then regarding how to size it in order for the vent throat to do a certain job is an intended use of the vent throat.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to size the vent throat properly so as to let the vent

Art Unit: 2861

throat to perform a special task based on the size being designed, refer to MPEP 2144.04 IV A and B and Ex parte Masham, 2 USPQ2d 1647 (1987).

Claim 10:

The apparatus of Claim 7, further comprising a humectant in the second cavity.

Rejection:

This claim is rejected on the basis as set forth for claim 4 discussed above.

Claim 11:

The apparatus of Claim 7, wherein the second cavity has a fixed volume.

Rejection:

This claim is rejected on the basis as set forth for claim 5 discussed above.

Claim 12:

The apparatus of Claim 7, in a printing device.

Rejection:

Rejection:

This claim is rejected on the basis as set forth for claim 6 discussed above.

Claim 13:

A method for use in a printing device having a print head, comprising:

capping the print head;

diffusing pressure variations caused by capping into a fixed volume; and

sealing the print head and fixed volume from ambient during, capping.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Art Unit: 2861

Claim 14:

Michael further teaches:

wherein the printing device includes a plurality of print heads (70, 72, 74 and 76, fig. 2).

The device of Michael DIFFERS from claim 14 in that it does not teach:

isolating each of the print heads from communication with one another.

Per fig. 2, each print head is isolated from each other.

Therefore it would have been obvious to a person having ordinary skill in the art to understand once when the one looks at fig. 2 that each individual print head is isolate from each other.

Claim 15:

The method of Claim 13, further comprising retaining vapor from the print head in the fixed volume.

Rejection:

This claim is rejected on the basis as set forth for claims 2 and 5 discussed above.

Claim 16:

The method of Claim 15, further comprising limiting loss of vapor from the fixed volume.

Rejection:

This claim is rejected on the basis as set forth for claim 9 discussed above.

Claim 17:

Art Unit: 2861

An apparatus for use in a service station, comprising:

a plurality of caps each including an opening and each configured to engage a print head during nonuse; and

a plurality of separate chambers each of which is coupled to a different cap via a different opening, each of which is isolated to receive vapor from a single print head, and each of which is sealed from ambient during cap and print head engagement.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above. Claim 1 is a discussion for a single print head. Therefore, as to a plurality of print heads is concerned, the rejection is still valid.

Claim 18:

The apparatus of Claim 17, wherein each chamber is configured to accommodate pressure variations occurring during cap and print head engagement.

Rejection:

This claim is rejected on the basis as set forth for claims 2 and 5 discussed above. Because vapor from the print head is a result of pressure variations and a container such as the reservoir or the catch basin having a fixed volume in fluidic communication with the print head has the capability to accommodate such pressure variation.

Claim 19:

The apparatus of Claim 17, further comprising a plurality of conduits configured to couple the chambers to the caps.

Art Unit: 2861

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above. In this claim the so-called conduits is equivalent to the vent throat (144).

Claim 20:

The apparatus of Claim 19, wherein the conduits are configured to minimize loss of vapor during periods of print head use.

Rejection:

This claim is rejected on the basis as set forth for claim 9 discussed above.

Claim 21:

The device of Michael DIFFERS from claim 21 in that it does not teach:

wherein the conduits are the same length.

From a view of fig. 2, it can be concluded that the conduits are the same length.

Therefore it would have been obvious to a person having ordinary skill in the art to justify that from a glance at fig. 2 the length of each conduit is of the same length.

Claim 22:

The apparatus of Claim 17, further comprising a humectant in each chamber.

Rejection:

This claim is rejected on the basis as set forth for claim 4 discussed above.

Claim 23:

The apparatus of Claim 17, in a printing device.

Rejection:

This claim is rejected on the basis as set forth for claim 6 discussed above.

Art Unit: 2861

Claim 24:

An apparatus for use in a printing device having a print head that includes a plurality of nozzles, comprising:

means for protecting the print head during periods of nonuse;

means for diffusing pressure variations occurring during engagement between the means for protecting and the print head to help prevent nozzle depriming, and

means for isolating the print head from ambient during engagement between the means for protecting and the print head.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above. For depriming, please refer to figs 12, 13 and 15 and col. 15, lines 31-37.

Claim 25:

The apparatus of Claim 24, further comprising means for collecting vapor released from the print head during engagement between the means for protecting and the print head.

Rejection:

This claim is rejected on the basis as set forth for claim 2 discussed above.

Claim 26:

The apparatus of Claim 24, further comprising means for limiting loss of vapor from the means for collecting during use of the print head.

Rejection:

Art Unit: 2861

This claim is rejected on the basis as set forth for claims 2 and 16 discussed above. Claim 2 is specifically dealing with retaining vapor in the reservoir, the vapor is from the print head. Retaining vapor in the reservoir is another expression for preventing from loss.

Claim 27:

A method for use in a printing device having a print head that includes a plurality of nozzles, comprising:

capping the print head during periods of nonuse;

diffusing pressure variations that occur during capping of the print head; and

isolating the print head from ambient during capping of the print head.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claim 28:

The method of Claim 27, wherein the printing device includes a plurality of print heads and further comprising isolating each of the print heads from communication with one another.

Rejection:

This claim is rejected on the basis as set forth for claim 14 discussed above.

Claim 29:

The method of Claim 27, further comprising collecting vapor released from the print head during capping of the print head.

Rejection:

Art Unit: 2861

This claim is rejected on the basis as set forth for claim 2 discussed above.

Retain vapor is the same as collecting vapor.

Claim 30:

The method of Claim 29, further comprising limiting loss of vapor collected from the print head during capping.

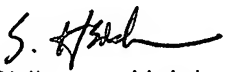
Rejection:

This claim is rejected on the basis as set forth for claims 2 and 9 discussed above.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 703-305-4961. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, B. Fuller can be reached on 703-308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

Application/Control Number: 10/053,665

Page 14

Art Unit: 2861

SWH

A handwritten signature in black ink, appearing to be 'SWH' with a stylized flourish.

March 21, 2003